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## Instructor Discusses Brain Injury and how IDC's are Trained

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*By Lt. Stephen C. Johnson, D.O., Surface Warfare Medical Institute*



Surface Warfare Medical Institute, San Diego trains corpsman in advanced patient care and medical administrative and logistical duties to function independent of a medical officer in operating forces and various isolated shore activities of the Navy and Marine Corps.

I remember the first time I ever saw someone with residual symptoms from having a traumatic brain injury (TBI). I was a Hospital Corpsman 3rd Class (HM3) at the time, and my co-worker had just returned from OIF 2.

When he would visit the acute care area at Naval Air Station North Island, where I worked he would complain of profound vertigo, which had been intermittent, but persistent since being injured when an improvised explosive device (IED) detonated next to his HumVee. It was early 2005. Discussion in the news and in the medical community at the time was that there was a rise in PTSD symptoms among returning Iraq veterans. Enemy tactics had changed to IEDs, and America had to develop new ways to combat the effects and injuries Americans were sustaining. TBI was not even in my vocabulary at that time; I didn't know the cause of my co-worker's vertigo or how to help treat him.



Since that time, much has been done in the areas of identifying TBI, treatment, and return to duty for these individuals. With March being Brain Injury Awareness month, I think it's important to remind ourselves what TBI is, who should be evaluated, hallmark signs and symptoms especially in mild traumatic brain injury (mTBI), and to take the opportunity to highlight the current curriculum that goes into training Independent Duty Corpsman, some of the Navy's finest Sailors.

By definition, per the DOD and VA, TBI is "a traumatically induced structural injury and/or physiological disruption of brain function as a result of an external force..." Signs of TBI may be new in onset or worsening regarding a loss or decrease in consciousness, amnesia to the event or events preceding (retrograde) or events following injury (anterograde), altered mental state including confusion, disorientation, or slowed thinking, etc..., or observable neurologic deficits. Intracranial lesions to include bleeding may also be noted on imaging following an injury or event. Severity score of mild, moderate, or severe is based on the length of time symptoms persist. Fortunately, most TBI cases, >80 percent, fall under the mild category.

**Who should be evaluated for a TBI? Anyone who falls into the mandatory evaluation:**

1. Involvement in a vehicle blast event, collision, or rollover 2. Presence within 50 meters of a blast (inside or outside) 3. A direct blow to the head or witnessed loss of consciousness 4. Exposure to more than one blast event. Additionally, anyone who screens positive using the IED checklist -Injury, Evaluation, and Distance should be evaluated That is, if there was an injury to the head or body, or if they were near a blast, especially within 50 meters, or if there is a headache and/or vomiting, ear ringing, amnesia, altered consciousness, and/or loss of consciousness, double vision and/or dizziness, or something feels wrong or is not right, then these individuals should be assessed for TBI. “HEADS” is the acronym to remember the evaluation portion of the IED checklist. More information can be found in DOD instruction 6490.11, *DoD Policy Guidance for Management of Mild Traumatic Brain Injury/Concussion in the Deployed Setting* (<http://www.dtic.mil/whs/directives/corres/pdf/649011p.pdf>)

The Military Acute Concussion Exam (MACE) is a valuable tool used to identify persons showing signs of a concussion and should be used within 48 hours of an injury.

**In order to diagnose someone with mTBI, aka concussion, two criteria must be satisfied.**

1. A head injury event did occur.
2. The person experienced an alteration in mental status.

If those criteria have been satisfied, then MACE is administered to explore deficits in cognition, neurologic function, and/or presence of symptoms. A score of 28 on the cognitive portion is the average, though the total is 30. Individuals identified having a Cognitive score <25, or any positive findings on the neurologic exam, should be evaluated by a higher echelon of care. Though replaced by DODI 6490.11, the Directive-Type Memorandum 09-033 still has algorithms that can be referenced for Corpsman, Provider, Level I or II setting, and for recurrent concussions at <https://www.jsomonline.org/TBI/mTBI%20DTM%2009-033%2021%20Jun%202010.pdf>.

Finally, the ultimate treatment for mTBI is rest. Return to duty depends on how many concussions an individual has received in 12 months, the severity of the symptoms, and duration of those symptoms. Mission requirements may dictate the need to RTD faster. The single most important thing a practitioner can do is to educate the individual on what is happening, stressing the need to rest and why it is important, and monitor the patient using the Neurobehavioral Symptom Inventory for resolution or persistence of symptoms. Guidelines for Progressive Return to Activity Following Acute Concussion/mild Traumatic Injury: Guidance for the Primary Care Manager in Deployed and non-Deployed Settings, can be found at

[https://dvbic.dcoe.mil/sites/default/files/2014\\_PRA\\_PCM\\_CR\\_A3\\_FINAL.pdf](https://dvbic.dcoe.mil/sites/default/files/2014_PRA_PCM_CR_A3_FINAL.pdf).

An educational brochure to review with your patients regarding what to expect following a concussion, how to self-monitor using the NSI, and explaining the different stages of rest (1-6), and what to avoid can be found at [https://dvbic.dcoe.mil/sites/default/files/2014\\_PRA\\_PCM\\_CR\\_A3\\_FINAL.pdf](https://dvbic.dcoe.mil/sites/default/files/2014_PRA_PCM_CR_A3_FINAL.pdf).

Due to the lack of knowledge I had in 2005 understanding my colleague’s TBI symptoms, I am inspired to teach everything I know about brain injuries so that future IDCs won’t feel as helpless as I had felt. Surface Warfare Medical Institute, in San Diego trains corpsman (HM E5-E7) in advanced patient care and medical administrative and logistical duties to function independent of a medical officer in operating forces and various isolated shore activities of the Navy and Marine Corps. Graduates earn Surface IDC NEC 8425 or Deep Sea IDC NEC 8494.

The yearlong course covers many aspects of medicine and administrative topics, and they must be trained to be versatile in many environments. IDCs are likely to encounter patients with TBI because they serve on a ship, in the field with the Marines, with EOD platforms, or forward deployed with NSW. Training

these Sailors is crucial so the US Navy can accomplish its world-wide missions wherever duty calls.

TBI specific training encompasses a thorough understanding of neuroanatomy, physiology, relevant pharmacology, in addition to diagnosing and treating all spectrums of TBI – from concussion to hemorrhages. Techniques include didactics, hands on skills labs, multimedia to include NKO courses TBI 201, 301, 302, and 401, reviewing the MACE exam, and finally testing scenarios. IDC students are able to bring their skills in interviewing, examining, and diagnosing to the forefront in order to prescribe and execute a plan for each tested scenario.

These are the Navy's finest Sailors. They are the future of operational healthcare for forward deployed forces. It is imperative that they understand everything they can, are familiar with their tools, and are able to demonstrate remarkable skill and knowledge in order to succeed in this rigorous yearlong course. An IDC student who is about to graduate told me recently, "I already knew how to do a MACE, but now I understand what process is happening in the brain, where the problem is likely occurring, and I feel a lot more comfortable in treating someone and what to watch for if someone has an injury, or any injury for that matter." – HM2 Trimmer, IDC class 15015.

Defense and Veterans Brain Injury Center (DVBIC) can be contacted for MACE cards, Brochures, or Algorithms at [info@dubic.org](mailto:info@dubic.org) for use at your clinical practice.

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